

## **REMARKS**

Favorable reconsideration and allowance of this application based on the amendments above and the remarks which follow are requested.

### **1. Request for Continued Examination**

As a procedural note, the present amendment is being filed concurrently with a formal Request for Continued Examination (RCE) under 37 CFR §1.114. Accordingly withdrawal of the "finality" of the May 21, 2009 Official Action is in order so as to allow entry and consideration of the amendments and remarks presented herewith.

### **2. Discussion of Claim Amendments**

By way of the amendment instructions above, independent claims 21 and 37 have been revised in an effort to clarify the claimed subject matter. Several of the dependent claims have also been amended for the purpose of expression consistency.

In essence, the independent claims now clarify that cleaning equipment is arranged to sequentially clean differently located parts of the heat exchange surfaces, so as to release sequentially particles from the respective differently located parts of the heat exchange surfaces cleaned by the cleaning equipment. The particles sequentially released from the respective differently located parts are measured so as to create particle measurement data associated with each of the respective differently located parts of the heat exchange surfaces cleaned during a cleaning cycle.

Thus, according to the presently claimed invention location information pertaining to each of the respective differently located parts of the heat exchange surfaces as well as the particle measurement data created during the cleaning of the respective differently located parts of the heat exchange surfaces are linked together and stored in

an electronic memory so as to create fouling information which is in turn related to fouling on the respective differently located parts of the heat exchange surfaces.

Following entry of this amendment, therefore, amended versions of claims 21-41 will remain pending herein, of which claims 27-28 have been withdrawn as directed to patentably distinct species.<sup>1</sup> Favorable reconsideration and allowance of all pending claims are requested.

### **3. Response to 35 USC §103(a) Rejection**

The Examiner persists in his rejection of claims 21-26 and 29-41 under 35 USC §103(a) based on the previously applied Archer et al (USP 4,996,951) in view of Rigby (USP 5,591,895) and Perrone (USP 6,325,025). Applicants suggest that the rejection is inappropriate against the presently pending claims herein and thus should be withdrawn.

The Examiner will recall that a particularly important aspect of the present invention is the creation of information of the fouling on *differently located parts* of heat exchange surfaces by measuring particles sequentially released from such differently located parts, respectively, during a cleaning cycle whereby the heat exchange surfaces are cleaned by suitable cleaning equipment.

Turning to the applied publications of record, applicants note that Archer et al indeed teaches a method of cleaning heat exchange surfaces and that Rigby teaches a method of measuring particles in a gas stream. Applicants submit however that that applying the method of measuring particles -- *especially during or immediately after a heat exchange surface cleaning pulse* -- and then using the measured data to obtain

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<sup>1</sup> Claims 27-28 have been retained in the application for the purpose of rejoinder following allowance of a generic claim covering the same and have been amended per the amendment instructions above so such withdrawn claims are consistent with the language employed in the amended version of independent claim 21 from which they depend.

*information of the fouling on differently located parts of heat exchange surfaces is patently unobvious.*

In this regard, applicants agree that Archer et al teaches a method of determining information on the fouling of heat exchange surfaces. However, the method proposed by Archer et al is totally different from that of the presently claimed invention. The existence of the method of Archer et al actually demonstrates that the problem which is addressed by the present invention is known. However, applicants submit that what Archer et al has proposed in terms of a solution to such a problem does not teach or motivate an ordinarily skilled person toward the presently claimed invention, but instead tends to minimize the motivation of a person of ordinary skill in the art, to look for alternative solutions.

In general, applicants acknowledge that it would have been obvious to have a particle measuring system in an exhaust gas stream to continuously control particulate emissions of the gas stream. However, it is clear to a person of ordinary skill in the art that particle measurement data created during a heat exchange surface cleaning cycle (e.g., wherein a pulse of pressurized fluid is typically applied to the surfaces to dislodge the fouling material) is not representative for the exhaust gas stream. Thus, such data that is obtained *during the cleaning cycle* would be disregarded from the data, or at most such data would be averaged with other data obtained during normal operations.

It is respectfully submitted that the observation that this particular data is especially important for a specific reason -- monitoring fouling of *differently located parts* of the heat exchange surfaces -- is both a novel and unobvious discovery by the present applicants.

A principal teaching of Perrone is that removal of deposits from a heat transfer surface can be optimized by controlling operating parameters of a sootblower on the basis of measured conditions of the surface after the removal of deposits. In addition,

Perrone teaches to link together and store in a database boiler operating conditions and optimized sootblowing operating parameters, to be able to choose proper initial operating parameters for a new sootblower operation on the basis of the then prevailing boiler operating conditions. While the sootblower operating parameters are chosen before a sootblower pulse, it is clear that the relevant boiler operating conditions, to be stored and to be used when applying the method, are those prevailing *immediately before a sootblowing pulse*, especially if the boiler conditions involve data which are affected by the pulse.

It is possible, even though not likely, that the boiler operating conditions might include particle measurement data. However, on the basis of what is noted above, it is clear to a person of ordinary skill in the art that the boiler operating conditions, and possible particle measurement data, which according to Perrone are to be stored and used for determining initial sootblower operating parameters, are those obtained immediately before a sootblower pulse.

In direct contrast to the operation of Perrone's system, the measurement data of particles sequentially released by the cleaning of the differently located parts of the heat exchange surfaces according to the presently claimed invention, i.e., measured during or immediately after a heat exchange pulse, are used to create information of the fouling on the differently located heat exchange surfaces.

Applicants therefore submit that the observation that information of fouling can be created by linking together location information of each of the differently located parts of the heat exchange surfaces and particle measurement data associated with such *differently located parts* of the heat exchange surfaces obtained during their respective cleaning is patentably unobvious based on the combination of Archer et al, Rigby and Perrone as discussed above.

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Therefore, withdrawal of the rejection advanced against claims 21-26 and 29-41 is in order. Early receipt of the Official Allowance Notice is thus solicited.

**3. Fee Authorization**

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:           /Bryan H. Davidson/            
Bryan H. Davidson  
Reg. No. 30,251

BHD:dlb  
901 North Glebe Road, 11<sup>th</sup> Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100